MANUAL

VBP-HH1-V3.0-V1
AS-Interface Handheld

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SENSING YOUR NEEDS

With regard to the supply of products, the current issue of the following document is applicable: The General Terms of Delivery for Products and Services of the Electrical Industry, published by the Central Association of the Electrical Industry (Zentralverband Elektrotechnik und Elektroindustrie (ZVEI) e.V.) in its most recent version as well as the supplementary clause: "Expanded reservation of proprietorship"

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1 Declaration of conformity

This product was developed and manufactured under observance of the applicable European standards and guidelines.

Note!

A Declaration of Conformity can be requested from the manufacturer.

The product manufacturer, Pepperl+Fuchs GmbH, D-68307 Mannheim, has a certified quality assurance system that conforms to ISO 9001.

ISO9001

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2 Safety

2.1 Used Symbols

Safety-relevant Symbols

STOP	***Danger!*** This symbol indicates a warning about a possible danger. In the event the warning is ignored, the consequences may range from personal injury to death.

⚠	***Warning!*** This symbol indicates a warning about a possible fault or danger. In the event the warning is ignored, the consequences may course personal injury or heaviest property damage.

△	***Caution!*** This symbol warns of a possible fault. Failure to observe the instructions given in this warning may result in the devices and any connected facilities or systems develop a fault or fail completely.

Informative Symbols

Note!

This symbol brings important information to your attention.

Action

This symbol marks an acting paragraph.

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2.2   General safety instructions

Installation and commissioning of all devices must be performed by a trained professional only.

Protection of operating personnel and the system is not ensured if the product is not used in accordance with its intended purpose.

Only use recommended original accessories.

Independent interventions and separate modifications are dangerous and will void the warranty and exclude the manufacturer from any liability. If serious faults occur, stop using the device. Secure the device against inadvertent operation. In the event of repairs, send the device to Pepperl+Fuchs.

When packing the device for storage or transport, use materials that will protect the device from bumps and impacts and protect against moisture. The original packaging provides the best protection. Also take into account the permitted ambient conditions.

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3 Notes on disposal

Electronic waste is hazardous waste. When disposing of the equipment, observe the current statutory requirements in the respective country of use, as well as local regulations.

Do not dispose of storage batteries with the household refuse.

Consumers are obliged by law to dispose of used storage batteries in accordance with regulations. You can hand in your used batteries at public collection points in your area or sales points where batteries of that particular kind are sold. You can also send your used batteries directly to us for disposal. Please remember that this service is only available within the scope of normal use. If you wish to send back your used batteries, please affix sufficient postage stamps and send to our address. There are no extra charges for disposal.

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4 Product description

4.1 What is AS-Interface?

The actuator-sensor interface (AS-Interface) replaces conventional wiring technology on the sensor-actuator level.

AS-Interface provides a secure data transfer, which is resistant to EMC influences, while minimizing the time and costs of installation and incorporating a diagnostic function. AS-Interface detects short-circuits, reduces incidental maintenance costs, and enables a simple decentralization of control processes. Your plant takes on greater transparency, making maintenance and tooling straightforward and more flexible.

AS-Interface is not a proprietary system, but an open standard accessible to manufacturers in a wide range of products.
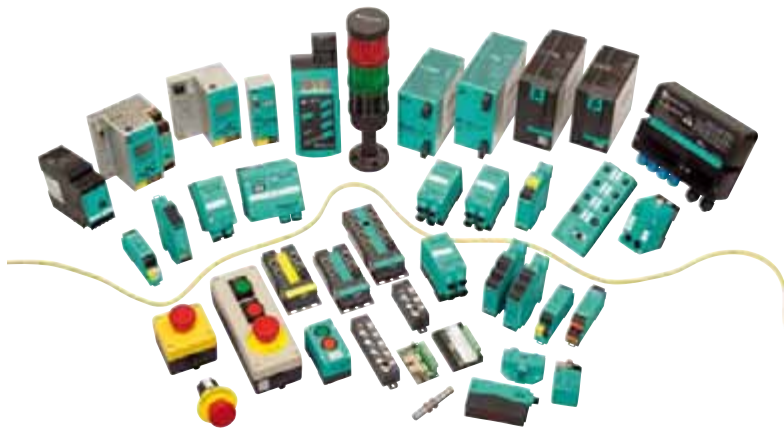
AS-Interface is optimally suited for the safe transfer of small quantities of data under harsh industrial conditions. It has also established and proven itself as an economical standard for networking sensors and actuators in many applications.

Conventional wiring typically requires two wires for power supply and an additional wire for the signal or control line for each sensor and actuator. This results in high costs in terms of connection/distributor technology, requires time-intensive installation, and necessitates costly and complex documentation.

By comparison, AS-Interface offers the following advantages:

• Two-wire cable for the data and energy transmission of all slaves/modules.

• Connection using insulation piercing technology saves time, since stripping cables and fitting connector sleeves are avoided.

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4.2 AS-Interface Specification 3.0

In 2004, the AS-Interface Association defined the AS-Interface Specification 3.0 as a backwards-compatible extension, while retaining the protocol and physical structure. AS-Interface Specification 3.0 gives the user important advantages:

• The number of possible network slaves is increased to 62. This is accomblished by enabling 31 **A** addresses and 31**B** addresses of which each is able to support up to 4 output databits.

In the master message of Specification 3 the **I3** output bit has been replaced by the **SEL** select bit. This select bit enables, in addition to the address bits A0 to A4, differentiation in the address areas **A** and **B**. Through this differentiation, any address can be distributed in both A and B, e.g. the address 15A and 15B.

In Specification 2.1 3 output bits are available per AS-Interface slave. In Specification 3.0, through the definition of the multiplex bit in place of the I2 bit, 4 output bits are available per slave(communication of 4 output bits in succession via the data bits I1 and I0), i.e. a total of 4*62=248 output bits. The slave message remains unaffected by this change, i.e. there are still 4*62=248 input bits available. In practice, this means an increase of the cycle time to a max. 20 ms, since in the 1st cycle the data of the AS-Interface slaves in the address area A, and in the 2nd cycle, the data of the respective AS-Interface slaves in the address area B are written and read. Additionally, the output bits are transferred one after the other.

Due to the backwards compatibility of Specification 3.0 you can continue to use standard AS-Interface slaves. However, two of the 62 possible addresses are occupied by a standard AS-Interface slave.

Structure of the master message

SB	CB	A4	A3	A2	A1	A0	I4	SEL	MUX	I1	I0	PB	EB

Note!

You have the option of reducing the cycle time by reducing the number of AS-Interface slaves or by addressing the A/B-Slaves in the standard mode.

• Extended diagnostic function

In addition to communication faults (e.g. messages with errors), the AS-Interface master also detects hardware faults that are present on the AS-Interface slave. You have the option of utilizing these peripheral error messages to provide a defined system shutdown in the event of a fault, since sensor signals are no longer guaranteed to be available. In addition, a statistical evaluation of the data is conceivable in order to assess the safety of the system. Also, because of the extended diagnostics, it is possible to locate sporadically occurring faults with regard to configuration and communication and to evaluate them via the AS-I Control Tools.

• Extension of the ID-Codes of the AS-Interface slaves.

Specification 2.1 AS-Interface slaves (A/B slaves) have the hexadecimal value **A** as the ID-Code and have 2 more identification codes (ID1 and ID2) that describe the functionality of the slave. You have the option of describing the ID1-Code.

The ID-Code for standard AS-Interface slaves differs from the ID-Code of the A/B slaves. With standard AS-Interface slaves, no further identification codes are included.

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Note!

If you have changed the ID1-Code and want to automatically program the address, check **before** the installation of the new AS-Interface slave that the ID1-Code has been correctly stored in the AS-Interface slave.

4.3 Use and application of the handheld device

AS-Interface slaves are usually addressed with a handheld device. As a rule, a number of steps are necessary to address the slaves and in the future you will be able to execute this procedure faster using the handheld device:

- Unique addressing of the AS-Interface slaves

- Isolation of the AS-Interface slaves from the AS-Interface network

- Power supply to the AS-Interface slaves via the handheld device

- Function checks – even without PLC

New functions in Version 3.0

The following functions have been integrated in Version 3.0 of the handheld device:

- Semi-automatic addressing of AS-Interface slaves (see chapter 6.1)

- Permanent data exchange with AS-Interface slaves (see chapter 6.8)

- Support of the data exchange with 4E4A slaves with A/B address (see "Complex communication protocols" on page 24)

- Display of the Safety-Code for AS-Interface safety slaves (see "Read Safety-Code (AS-Interface Safety at Work)" on page 25)

New functions in Version 3.0-V1

The following functions have been integrated in Version 3.0-V1 of the handheld device:

- Looping in of the supply voltage, either via the AUX connections or via the AS-Interface/DC connections (decoupled).

4.4 Scope of delivery:

The delivery package contains:

- Addressing device

- Charger

- V1-G-0.3M-PVC-V1-G connection cable
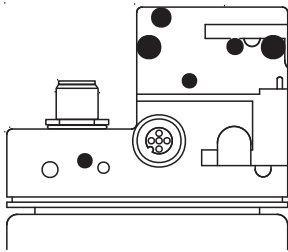
- VAZ-PK-1.5M-V1-G connection cable

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4.5　　　Displays and controls

1　　M12 connector to connect an external power supply.

2　　AS-Interface connection adapter

3　　LC Display

4　　**Up** arrow button

5　　**Down** arrow button

6　　**PRG**　button

7　　**ADR**　button

8　　Charger connector

9　　**Mode**　button

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11

4.5.1 AS-Interface connection adapter

The AS-Interface connection adapter on the top of the addressing device is used to connect AS-Interface slaves (Sensors, actuators, and interface modules) to the addressing device. The following devices and models can be connected directly to the addressing device by plugging into the AS-Interface connecting adapter:

• Devices with M12 connector

• VariKont M-System

• VariKont-System

• FP-models

• AS-Interface modules (*-G1, *-G4, *-G16)

For models with an integrated addressing jack, please use the VAZ-PK-1.5M-V1-G adapter cable included with delivery.

An additional M12 connector is provided on the front of the housing. It provides a connection option for an external auxiliary supply, AUX, for slaves. Due to the integrated decoupling coils, you can connect a DC or AS-I voltage to supply the slaves and save the battery s charge. A connection cable is provided with delivery in case an extension is required.

4.5.2 LC Display
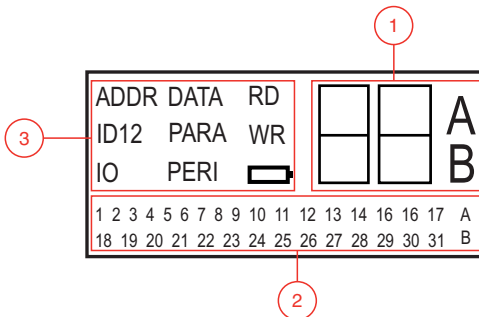
1 Address and data display

2 Address field

3 Operating mode display

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Address and data display

In this area of the display, depending on the operating mode, two digits and the letters A and B are used to display various information:

- The address of the current selected AS-Interface slave differs according to the AS-Interface specification supported and the address areas **Standard** (shown without letters), **A** and **B**.
- Target address which is to be communicated to the currently selected AS-Interface slave
- Display of read data
- Display of data to be written

Address field

All the AS-Interface slaves of the AS-Interface network are shown in this area of the display:

- If the addressing device detects AS-Interface slaves from various address areas, the various address areas are identified in the right-hand section of the address field, as follows:

  - Without letters: For AS-Interface slaves that do not support the AS-Interface Specification 2.1.

  - A: For AS-Interface slaves belonging to address area A.

  - B: For AS-Interface slaves belonging to address area B.

 The display of the detected addresses in the respective address area changes every 2 seconds.
- The addresses of all AS-Interface slaves currently connected to the addressing device are shown in the **Addressing operating** mode by flashing digits. In all other operating modes, the addresses of the AS-Interface slaves shown flashing are those being actively accessed.
- The non-flashing digits represent addresses of AS-Interface slaves that have already been assigned addresses by the addressing device. These addresses are blocked during automatic addressing as already assigned target addresses.

Operating mode display

The current operating mode is shown in this area of the display. The following operating modes are available:

Indication on the display	Operating mode	Chapter
ADDR	Addressing	see chapter 6.1
ID:	Read ID	see chapter 6.2
ID1	Read/write ID1	see chapter 6.3
ID2	Read ID2	see chapter 6.4
IO	Read IO	see chapter 6.5
DATA	Read/write slave data	see chapter 6.7
PARA	Set slave parameter	see chapter 6.7
PERI	Read peripheral fault	see chapter 6.6

4.5.3 Button assignment

Button	Description
↑	Set values (e.g. slave address, ID1 data, slave parameters, slave data), change operating mode
↓	Set values (e.g. slave address, ID1 data, slave parameters, slave data)
PRG	The function depends on the operating mode: • transmission of a new slave address to the slave (ADDR) • transmission of ID1 data (ID1) • transmission of slave parameters (PARA) • transmission of slave data (DATA)
ADR	Switch on addressing device, search and read out slave addresses
MODE	Change between operating modes

4.5.4 Connectors
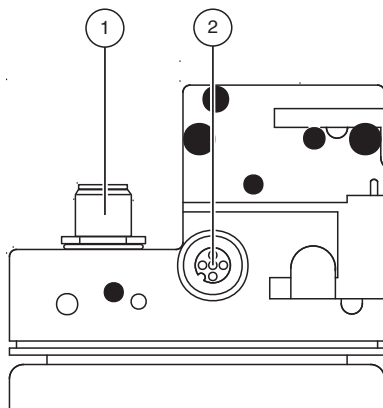
Figure 4.1: Connection adapter

1. External power supply (M12 connector)

2. Slave connection (M12 connector)

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Figure 4.2: External power supply (M12 connector)

1.   + AS-Interface/DC

2.   - AUX
3.   - AS-Interface/DC
4.   + AUX

Figure 4.3: Slave connection (M12 connector)

1.   + AS-Interface:

2.   - AUX
3.   - AS-Interface:
4.   + AUX
5.   Reserved (do not use)

4.5.5   Application example

Connecting an external supply voltage to

1.   supply a heavy consumer load. Power supply through:

   •   AUX – inputs/outputs

   •   AS-Interface/DC – inputs/outputs

2.   Conserve the battery
   •   for longer operating life

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15
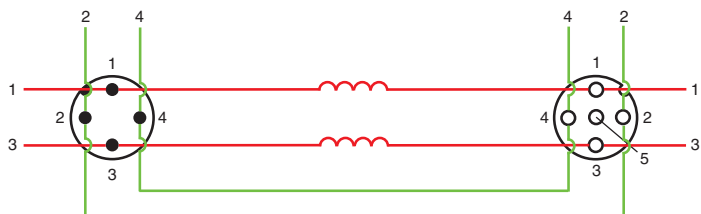
External power supply (M12 connector)

1. + AS-Interface/DC
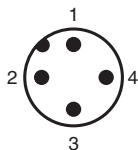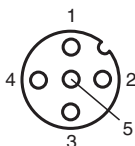
2. - AUX
3. - AS-Interface/DC
4. + AUX

Slave connection (M12 connector)

1. + AS-Interface:

2. - AUX
3. - AS-Interface:
4. + AUX
5. Reserved (do not use)

The supply voltage connected to the AUX inputs on the M12 connector, External Power Supply, is directly connected to the AUX outputs of the M12 Slave Connection.

The supply voltage, connected to the AS-Interface/DC inputs on the M12 connector (External Power Supply) is separated from the AS-Interface/DC outputs of the M12 connector(Slave Connection) by the decoupling coils.

Note!

The master must not be switched offline!

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5 Commissioning

5.1 Preparation

The addressing device battery is delivered fully charged. However, as a result of self-discharge, the charge may not be sufficient to operate the addressing device. Therefore, we recommend that you charge the battery for a period of at least 24 hours prior to commissioning.

Note!
The battery cannot be overcharged!

Charging battery

1. Connect the plug of the plug-in power-supply unit cable to the device connecting jack.
2. Connect the plug-in power-supply unit to the mains power supply.

   The battery is charged.

Connecting the AS-Interface slaves

Proceed as follows to connect an AS-Interface slave:

1. Insert devices with an M12 connector or VariKont, VariKont M Series devices as well as FP model devices and *-G1 and *-G4 series interface modules directly into the designated location on the connecting adapter and ensure that they are firmly seated.
2. For devices with an integrated addressing jack, connect the VAZ-PK-1.5M-V1-G adapter cable (provided with delivery) to the device and plug the other end of the cable into the addressing device.
3. If necessary, connect an external power supply.

To connect an external power supply

1. Connect the external power supply to the M12 connector on the front of the housing.
2. A connection cable is provided with delivery in case an extension is required.

Warning!
No reverse polarity protection

The device can be damaged or destroyed if the polarity is reversed.

- Connect the brown wire to AS-I + (Pin 1), the blue to AS-I - (Pin 3).
- Connect to AUX 24V PELV (not short-circuit protected).
- See the connection layout see chapter 4.5.4

Addressing the device interface

1. Connect an AS-Interface slave.
2. Briefly press the ADR button.

   The addressing device switches on in the **addressing** operating mode and shows the address of the current AS-Interface slave.

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Change operating mode

1. Briefly press the MODE button to change the operating mode.

2. Alternatively, press and hold down the MODE button and scroll with the ↑ and ↓ buttons through the individual operating modes.

   The current operating mode is shown in the operating mode display.

Navigate through the addresses.

1. Press the ADR button to jump to the next address of a connected AS-Interface slave.

2. Alternatively, press and hold down the ADR button and scroll with the ↑ and ↓ buttons to the next/previous address.

5.2 Storage and transport

For storage and transport purposes, package the unit using shockproof packaging material and protect it against moisture. The best method of protection is to package the unit using the original packaging. Furthermore, ensure that the ambient conditions are within allowable range.

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6 Operation

6.1 **Addressing** operating mode

You have 2 options to address AS-Interface slaves:

Semi-automatic addressing:

In this mode – in contrast to manual addressing – the addressing device provides the source and target addresses automatically.

Manual addressing:

In this mode – in contrast to semi-automatic addressing – the addressing device provides no source and target addresses.

The addressing process is divided into 3 individual procedures. The following table shows the differences between manual and semi-automatic addressing:

Note!

When addressing AS-Interface slaves, make sure that the address 0 is not occupied. Otherwise, an error message may be given.

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Procedure	Manual addressing:	Semi-automatic addressing:
Selecting the source address	manual, see "Select source address" on page 20	• **one AS-Interface slave connected**: The address of the connected AS-Interface slave is automatically detected as the source address. • **several AS-Interface slaves connected**: The source address must be manually selected, see "Select source address" on page 20.
Selection of target address	manual, see "Manual addressing: Set the target address" on page 20 When being addressed, if the target address is already occupied by another AS-Interface slave, the addressing device shows an error message.	The next free address is shown by the handheld device. This can be accepted by pressing the PRG button.If necessary, the address can be modified before acceptance. You have the option of specifying a target address area, see "Semi-automatic addressing: Enter target address area" on page 20. If the AS-Interface address area is already occupied, the addressing device shows an error message.
Start addressing	manual, see "Start manual addressing" on page 21	see "Select source address" on page 20, In the most favorable case, one press of the button suffices for a complete addressing procedure.

Select source address

Press the [ADR] button to select the AS-Interface slave to which you want to assign a new address. If several AS-Interface slaves are connected to the addressing device, press the [ADR] button several times or press and hold down the [ADR] button. Scroll through the addresses with the [↑] and [↓] buttons.

Manual addressing: Set the target address

Set the target address with the [↑] and [↓] buttons.

Semi-automatic addressing: Enter target address area

With the [↑] and [↓] buttons set the target address where the search for a free target address will begin.

A target address is free, when:

• being re-addressed, no AS-Interface slave with this address is physically connected,
• the address has not been previously assigned as a target address .

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Tip

Double addresses marked as occupied

If an A or a B address is marked as occupied and an A/B slave is connected, the associated standard address is deemed occupied.

The target addresses are assigned in the following sequence:

- **Standard AS-Interface slave**: 1 -> 2 -> 3 ... 30 -> 31 -> 1 ...

    Beginning with the start address, the next higher address for standard AS-Interface slaves is assigned. Already occupied addresses are ignored.

- **A/B Slaves**: 1A -> 1B -> 2A -> 2B -> 3A -> 3B ... 30A -> 30B -> 31A -> 31B -> 1A -> 1B ...

    Beginning with the start address, the next higher address for A/B slaves is assigned. Already occupied addresses are ignored.

    The already assigned addresses are stored in the addressing device in a list of assigned addresses and shown in the address field of the display as a non-flashing number. This list is automatically checked and updated when new addresses are assigned. It remains available after the the addressing device is restarted . Thus double addressing during semi-automatic addressing is excluded.

Start manual addressing

To start manual addressing press the PRG button for approx. 2 seconds.

Start semi-automatic addressing

Press the PRG button briefly to start semi-automatic addressing.

Delete the list of assigned addresses

To delete the list of assigned addresses, briefly press and hold down the PRG and ADR buttons simultaneously.

Caution!
If you manually assign addresses, the list of assigned addresses is not taken into account. If, for example, you manually address several AS-Interface slaves **individually**, an inadvertent double assignment canoccur.

6.2   **Read ID** operating mode

As soon as you switch to the **Read ID** operating mode, the ID code of the active AS-Interface slave is read in and shown in the address and data display. The value of the ID-Code is always **A** for A/B Slaves.

Repeat reading

To repeat the reading of the code, press the ADR button.

6.3 **Read/write IDI** operating mode

Note!

AS-Interface Specification 2.1

This function applies only to AS-Interface slaves that support Specification 2.1.

As soon as you switch to the **Read/write ID1** operating mode, the ID1 code of the active AS-Interface slave is read in and is shown in the address and data display.

Repeat reading

To repeat the reading of the code, press the `ADR` button.

Write ID1 Code

Note!

The value of the ID1 Code ranges from 0 to 15 for standard AS-Interface slaves and from 0 to 7 for A/B slaves.

To write an ID1 Code to the active AS-Interface slave, proceed as follows:

1. Set the desired value for the ID1 Code with the `↑` and `↓` buttons.

    The **RD** display goes out when scrolling up and down.

2. Press the `PRG` button to write the desired value permanently to the active AS-Interface slave,.

    WR appears in the operating mode display.

6.4 **Read ID2** operating mode

Note!

AS-Interface Specification 2.1

This function applies only to AS-Interface slaves that support Specification 2.1.

As soon as you switch to the **Read ID2** operating mode, the ID2 code of the active AS-Interface slave is read in and is shown in the address and data display. It is not possible to change this value.

Repeat reading

To repeat the reading of the code, press the `ADR` button.

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6.5 **Read IO** operating mode

As soon as you switch to the **Read IO** operating mode, the IO code of the active AS-Interface slave is read in and is shown in the address and data display.

Repeat reading

To repeat the reading of the code, press the ADR button.

6.6 **Read Peripheral Fault** operating mode

As soon as you switch to the **Read Peripheral Fault** operating mode, the address and data display indicates if there is a peripheral fault on the AS-Interface slave. A peripheral fault is present if the value 1 is displayed. The cause of the fault depends on the AS-Interface slave being used.

Repeat reading

To repeat the reading of the code, press the ADR button.

6.7 Set **Slave Parameter operating** mode

In the operating mode **Read/write slave data**, the slave parameter value activates the data transmission from the addressing device to the AS-Interface slave. The standard value is 15 for standard AS-Interface slaves and 7 for A/B slaves.

The set data value is retained until:

- You change the active address in the **Addressing** operating mode,
- You replace the AS-Interface slaves which have the same address but different ID, ID2, or IO codes.
- The addressing device is automatically switched off after a long period without use.

You must adapt the corresponding slave parameters according to the AS-Interface slave used.

Set parameters

1. Set the desired slave parameter value with the ↑ and ↓ buttons.

   By scrolling up and down, the **RD** display goes out.

2. Press the PRG button.

   WR appears in the operating mode display. The parameter value is temporarily accepted, but not transferred to the slave.

6.8 **Read/write slave data** operating mode

PRG button is pressed briefly	Send previously set output data once to an AS-Interface slave
PRG button pressed and held down	Cyclic sending of previously set output data
ADR button is pressed briefly	Read out input data once from the AS-Interface slave and send previously set output data to the AS-Interface slave.
Press the button ADR for 2 seconds.	Cyclic reading of the input data, cyclic sending of previously set output data.

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Set and send output data

1. Set the desired output data value with the ⬆ and ⬇ buttons .

    The **RD** display goes out when scrolling.

2. To temporarily save the desired output data value and transmit it once to the active AS-Interface slave, briefly press the PRG button. If you want to execute a cyclic output data exchange, you must (for security reasons) press and hold down the PRG button. The output data value is cyclically transmitted to the AS-Interface slave until you release the button.

    WR appears in the operating mode display.

The output data value is 0 as standard.

The set data value is retained until:

*   You change the active address in the **Addressing** operating mode,
*   You replace the AS-Interface slaves which have the same address but different ID, ID2, or IO codes.
*   The addressing device is automatically switched off after a long period without use.

Read data from the AS-Interface slave

Note!
When input data is read from the AS-Interface slave, the output data and/or parameter values are also automatically transmitted from the addressing device to the AS-Interface slave. Check that these values do not endanger the trouble-free operation of your plant/system.

To read the input data from the AS-Interface slave, briefly press the ADR button. If you press the ADR button for at least 2 seconds, the input data from the AS-Interface slave is cyclically read and the output data from the addressing device is sent to the AS-Interface slave. This continues until you press any button on the addressing device.

Complex communication protocols

The addressing device supports the following complex communication protocols:

*   AS-Interface slaves with the **profile S-7.A.7** are detected as AS-Interface slaves with extended addressing and 4 inputs and 4 outputs and are correctly handled.
*   AS-Interface slaves with the **profile S-0.B** and **S-7.B** are detected as AS-Interface slaves and handled in accordance with AS-Interface at Work.

All other complex communication protocols are not supported and are handled by the addressing device as standard AS-Interface slaves.

Safety Code (AS-Interface Safety At Work)

As soon as both input channels of an AS-Interface safety slave are active, a cyclic sequence of 8 x 4 bits is transmitted to the addressing device. These data are designated as the Safety-Code. The Safety-Code is defined as follows:

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Cycle	Structure of the data packet
1	00zz
2	yyxx
3	yyxx
4	yyxx
5	yyxx
6	yyxx
7	yyxx
8	yyxx

The Safety-Code always starts with the data packet 00zz. Thus this denotes the start of a new safety code. The two y-bits of the following data packets are never simultaneously 0. The two x-bits of the following data packets are 00.

Read Safety-Code (AS-Interface Safety at Work)

Reading Safety-Codes is supported by this addressing device. To be able to read Safety-Codes, proceed as follows:

1. Make sure that the two input channels of the AS-Interface safety slaves are active.

2. Press the ADR button.

   Each time the button is pressed, the hexadecimal value of the respective data packet of the Safety-Code, beginning with the first data packet 00zz, is shown in the address and data display.

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7 Error messages

The following messages can appear in the addressing device display.

Error code	Meaning	Description	Remedy
F1	AS-Interface overload	Current consumption of the AS-Interface slaves connected to the addressing device is too high.	Connect an external power supply.
F2	Slave not found	No AS-Interface slave has been found at the active address	Check the address or connect an AS-Interface slave.
F3	Programming error	When programming the address or the IDI code, the value could not be permanently stored in the AS-Interface slave s EEPROM.	If necessary, repeat the programming.
F4	Target address occupied	The target address, to which the current AS-Interface slave is to be reprogrammed, is occupied.	Assign a different address to the active AS-Interface slave.
F5	Address 0 occupied	Address 0 is occupied by another AS-Interface slave	Make sure that address 0 is not occupied.
F6	Standard AS-Interface slave found instead of the A/B-Slave	The standard operation cannot be executed because the active AS-Interface slave does not satisfy the specification 2.1	You cannot use the **Read IO**, **Set slave parameters**, and **Read/write slave data** operating modes with the currently connected standard AS-Interface slave.
F7	A-/B slave found instead of the standard AS-Interface slave	The active standard AS-interface slave has been replaced by an A-/B slave	Assign an address to the A-/B-Slave in the corresponding address area A or B.
F8	Reception error	Due to a fault, the AS-Interface slave response could not be correctly received	Carry out the action again.

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